found to be identical. The quantity existing in the Yerba de Paraguay has not been ascertained, but it is probably not less in amount than in coffee. Coffee, however, derives its pleasant flavour principally from its peculiar acid, called caffeic acid, which is very analogous to kinic acid, or the vegetable acid of Cinchona-barks. Dr. Stenhouse relates that when caffeic acid is treated with sulphuric acid and binoxide of manganese, it yields the peculiar principle called *kinone*, and that the Paraguay tea also furnishes kinone when subjected to a similar treatment. It is worthy of notice that the leaves of our common Holly, when exposed to the action of the same reagents, also yield kinone, as do the whole of the Cinchona tribe of plants and Asiatic Tea. There is another vegetable product of an analogous nature, the *guaraná*, or inspissated juice of the *Paullinia sorbilis*, prepared by the Indians of Pará, the infusion of which affords a very refreshing drink, of which the Indians are very fond. This has been analysed by Dr. Stenhouse, and found to contain a large proportion of theine. It is singular that Man, in the lowest grades of civilization, should have had the faculty of distinguishing and applying to his use those plants which contain the peculiar principle to which the tea of China owes its invigorating property.

XL.—*On a supposed new Genus and on some new Species of Pelagic Mollusca.* By Arthur Adams, F.L.S. &c.

As the little floating forms of Mollusca which inhabit the high seas are so little known and so seldom met with, I consider it interesting to the zoologist that the capture of every novel example should be recorded, even supposing the presumed "new genus" should hereafter be proved to be merely a synonym of some well-known type. Thus *Zoea* of Leach led the way to Thompson's revelations of the metamorphoses of the Crustacea, and *Cirrhopteron* of Sars to those of the Mollusca. *Sinusigera* of D'Orbigny has been said to be the larva of *Dolium*, the nucleus of which, however, is smooth and tumid, and the outer lip thin and simple. The same species, *S. cancellata*, has also been supposed by Macdonald to be the young of a very different shell, namely *Pedicularia*. The nearest approach to the small shells described below is *Sinusigera*; but if they be the fry or embryonic condition of some other mollusk, I cannot imagine to what known genus they can be affiliated.

Genus Alciope, A. Adams.

Testa dextrorsa, spiralis, trochiformis; anfractuultimo ad peripheriam

acute carinato. Apertura subquadrata ; labio recto, in spinam vel rostrum antice producto.

1. *Alciope rostralis,* A. Adams.

A. testa trochiformi, vitrea, pellucida ; anfractibus $3\frac{1}{2}$, convexiusculis; suturis, peripheria et rostro rufo tinctis ; rostro mediocri.

Hab. China Sea.

2. *Alciope spicata,* A. Adams.

A. testa trochiformi, semipellucida, nucleo magno nigricante ; anfractibus planiusculis, ultimo acute carinato ; rostro recto, valde producto, violascente.

Hab. China Sea.

Genus Sinusigera, D'Orbigny.

1. *Sinusigera fusoides,* A. Adams.

S. testa ovato-fusiformi, alba, subopaca ; anfractibus tribus, ultimo magno, in medio tumido ; apertura angusta ; labio recto, crasso, antice producto, acuminato ; labro antice et postice sinuato, in medio lobato.

Hab. In the sea, east coast of China.

2. *Sinusigera bicarinata,* A. Adams.

S. testa ovato-turbinata, fusca, semipellucida ; anfractibus $3\frac{1}{2}$, convexis, lævibus, ultimo bicarinato, basi carinula infra carinam inferiorem cincta ; apertura ovata ; labio brevi, antice abrupte truncato ; labro margine in medio lobato, antice et postice sinuato.

Hab. Indian Ocean.

These species, like those I have hitherto described, appear to be perfect adult shells with small nucleolar whorls and well-developed outer lips.

Genus Macgillivrayia, Forbes.

Macgillivrayia perspicua, A. Adams.

M. testa helicoidea, perforata, vitrea, lævi, nitida, pellucida ; spira depressa, apice lutescente ; anfractibus 3, convexis, ultimo amplo, superne subangulato ; apertura semiovata ; labio simplici, arcuato.

Hab. China Sea.

A small pellucid species, which, as shown by the operculum, belongs to this genus.

Genus Recluzia, Petit.

Recluzia Bensoni, A. Adams.

R. testa turbinata, tenui, pallide fulva, anguste umbilicata ; spira elata, acuta ; anfractibus $4\frac{1}{2}$, convexis, transversim striatis lineis-

que incrementi instructis; suturis profundis; apertura ovata, antice vix producta; labio rectiusculo, margine subreflexo; labro integro, regulariter arcuato.

Hab. China Sea, off Formosa.

In this species the whorls are more convex than in *R. turrita*, V. d. Busch, which it most nearly resembles, and the straight, elongate inner lip has the free margin somewhat reflexed; the aperture, moreover, is produced anteriorly, and the whorls are transversely striated. The nucleus is small and pointed, and the nucleolar whorls are quite pellucid.

The capture of this species was effected by my friend Lieut. Bullock, of the 'Dove,' Tender to the 'Actæon,' to whom I am largely indebted for specimens and for the observation of particular localities. It may possibly be the same species as that observed by Mr. Benson on his voyage to India, of which he has made mention in his paper on *Ianthina* in the 'Annals;' and to him, as a token of respect for his accuracy and enthusiasm, I have dedicated it.

Genus Ianthina, Bolten.

Ianthina (*Iodina*) *megastoma*, A. Adams.

I. testa helicophantoidea, turbinato-depressa, umbilicata, violacea, superne pallida; nucleo magno, obliquo, decumbente; anfractibus normalibus $1\frac{1}{2}$, rapide crescentibus, longitudinaliter sulcatis, ultimo amplo, ad peripheriam obtusim angulato; apertura subtrigonali, magna, patula, antice producta, subeffusa; labio recto, antice vix everso; labro margine in medio excavato.

Hab. Indian Ocean.

This is a very beautiful but rather small species, not quite so large as *I. exigua*, Lam., and resembling in form the genus *Helicophanta* or *Eurycratera*. The nucleus is large, of two whorls, and decumbent; the shell is depressed and obtusely carinate at the periphery, and the aperture wide, expanded, somewhat triangular and effuse anteriorly. Two adult and two young specimens were obtained in the towing-net during our passage across the Indian Ocean. It belongs to the subgenus *Iodina* of Mörch.

Genus Bellerophina, D'Orbigny.

Bellerophina recens, A. Adams.

B. testa parva, nautiliformi, globulosa, involuta, tenui, albida, roseo tincta, umbilicata, subsymmetrica, concentrice crenato-sulcata; apertura angusta, transversa, semilunari; labro margine integro, simplici.

Hab. Indian Ocean.

One specimen only of what I believe to be a recent species of *Bellerophina* has occurred to me, from the middle of the Indian Ocean. From the general appearance of the shell, I should be inclined to place the Bellerophontidæ after the family Atlantidæ, among the Heteropods.

Genus Litiopa, Rang.

The species of *Litiopa* of Rang, or *Bombyxinus* of Bélanger and of Lesson, are not well known. One is named *saxicola*, another *pelagica*; but there is much confusion attending them. About a dozen species have been described, but require to be brought together and compared. This from the Indian Ocean appears to be different from the others, and may be thus characterized:—

Litiopa ventrosa, A. Adams.

L. testa ovato-conoidali, tenui, cornea, semipellucida, longitudinaliter minutissime striata; spira elata, apice obtuso; anfractibus $4\frac{1}{2}$, convexis, ultimo ventricoso, basi producta; apertura ovata; labio recto, antice truncato; labro margine regulariter arcuato.

Hab. Indian Ocean.

There was no *Sargassum* in the sea where this species was taken in the towing-net. It is a somewhat inflated, thin, horny shell, with the inner lip abruptly truncate, and the outer lip continued beyond the truncature, so that the aperture cannot be said to be truncate anteriorly.

Shanghai, China,
May 3, 1861.

XLI.—*On the Arrangement of the Families and Genera of* Chlorospermous Algæ. By Dr. John Edward Gray, F.R.S., V.P.Z.S., F.L.S. &c.

Having been recommended to change the course of my studies for a time, I have returned to my "old love," and have been devoting my vacation and my leisure time to the study of *Algæ* and the reading of the various books and papers on the subject which have come in my way. Thus, after an interval of forty years, I have ventured to prepare a paper on systematic botany, and to send to the 'Annals' some suggestions as to the arrangement of the Chlorospermous Algæ.

I always look back with pleasure to the time that I spent in collecting plants and in studying and teaching botany, and especially to the period when I was occupied in preparing the scientific part of the 'Natural Arrangement of British Plants,'